

those counties that I did not see are more fertile than the immediate vicinity of the Michigan Central R. R. However, the figures for Norfolk County alone (which seems to have the largest proportion of evergreens) indicate somewhat poorer soil. It has 41.5 inhabitants per square mile (a decrease of 9.5% in twenty years), 30.4% of them in incorporated places, 13.0% farm woodland, 21.4% pasture, 40.9% field crops, and the farm land is worth only \$37.70 per acre.

TALLAHASSEE, FLA.

## A NOTE ON THE INTERRUPTED FERN

N. M. GRIER

I observed at Hanover, N. H., specimens of the interrupted fern, (*Osmunda Claytoniana*, L.) which did not conform to the descriptions for this species in that the number of fertile pinnae was greater than five pairs or even less than one. I was led to examine many other plants to see if a predominating number of fertile pinnae could be established for this species, since the descriptions of the manuals state that two to five pairs are present. This seemed further justified because of the probability that the species was described from a fewer number of specimens than I first examined.

A field in which this fern was one of the dominating species enabled me to secure counts from 609 fronds growing under three different conditions so far as the light factor was concerned. 178 of those observed belonged to plants fully exposed in the open, 71 to some growing completely in the shade of trees, while the remainder, 360, were from the border of the field adjacent to the woods where they received the full effect of the sunlight during part of the day only. It was noted in about 16% of all the cases that only portions of the fertile pinnae had developed sporangia, sometimes as little as one-third of the pinna being so occupied. Regardless of the proportion of it occupied by sporangia, a fertile pinna was counted as one.

All observed fertile pinnae were grouped by classes and a frequency polygon plotted. This indicated that 3 pairs were the most commonly distributed, making up 24% of the total number. Minor modes of the curve, (all percentages are ap-

proximate), were in order 2 pairs (17%), 4 pairs (14%), 2½ pairs (10%), 3½ pairs (9%), 1½ pairs (6%), 1 pair (5%), 5 pairs (5%), 6 pairs (3%), 4½ pairs (3%), 5½ pairs (2%), totalling 98%. One half of a pair was represented by 1%, 7 pairs by two-thirds of one per cent, 6½ pairs, one-half of one per cent, while but one case of the 609 fronds represented 7½ pairs.

It is noted that combinations observed, but not included in the descriptive manuals were 1 pair, 6 pairs, and 7 pairs. Of perhaps greater interest is the fact that separate frequency polygons plotted from the observations made under each light condition, showed modes in the same order of predomination as that already indicated for the species as a whole.

While some of the above facts may represent the response of this fern to peculiar environmental conditions, they are perhaps suggestive to the plant systematist, ecologist and geneticist alike. Data of this kind for many species can easily be acquired on the field trips of the botanist, and may not only give us a more accurate idea of a particular species but may also lead to some fascinating problem connected with it. Finally, these observations indicate that this particular species is well adapted for an elementary class room study in variation in those regions where it is abundant.

DES MOINES UNIVERSITY,  
DES MOINES, IOWA.

## THE CAT TAIL, *TYPHA ANGUSTIFOLIA*, IN UTAH

J. ARTHUR HARRIS

In his comprehensive *Flora of Utah and Nevada*, Tidestrom records the occurrence of both species of *Typha*. While *T. latifolia* is well known in Utah, where it is frequently seen in the drainage waters from irrigation canals, as well as in natural habitats, the distribution of *T. angustifolia* seems to be very limited. The plant, up to the present time, has been reported from two localities only.

*Typha angustifolia* is familiar to students of the Eastern United States as a plant occurring frequently in brackish coastal marshes. In 1921 Wetmore\* noted quite incidentally the occurrence of

\*Wetmore, A. Wild ducks and duck foods of the Bear River Marshes, Utah. Bull. U. S. Dep. Agr. 936: 1-20. 1921.